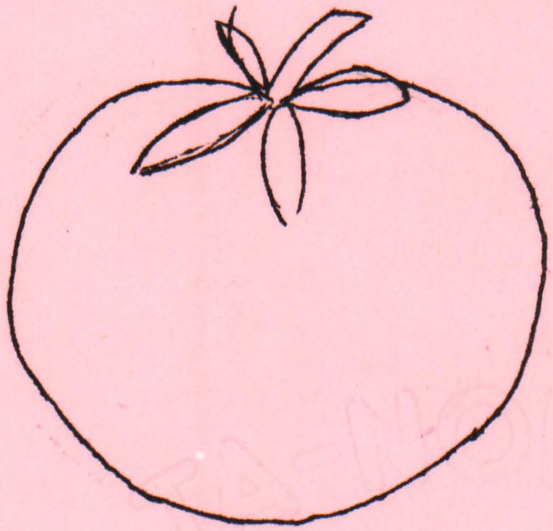
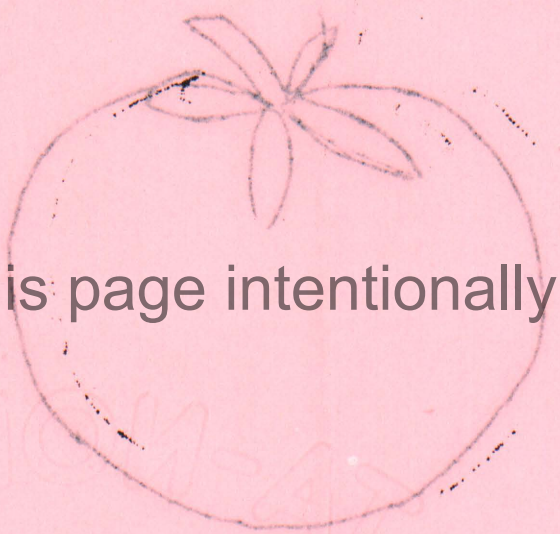
EVALUATION OF FRESH MARKET TOMATO CULTIVARS 1972

William L. George, Jr., James D. Utzinger,
and William M. Brooks



DEPARTMENT OF HORTICULTURE
OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
WOOSTER, OHIO

Horticulture Series 387
January 1973



This page intentionally blank.

EVALUATION OF FRESH MARKET TOMATO CULTIVARS 1972

William L. George, Jr.[1], James D. Utzinger[1],
and William M. Brooks[1]

The fresh-market tomato trial at the Ohio State University Horticultural Farm, Columbus, in 1972 consisted of ten cultivars in three replications and 38 cultivars in non-replicated, single plots. These cultivars were trained to a double stem and tied to wooden stakes.

With the increasing interest in labor saving training systems for fresh market tomatoes, the ten entries in the replicated staked trial were also grown and placed in wire cages in a non-replicated plot. This was done to give information on the adaptability of the leading cultivars to the cage growing system and for use in designing future experiments with the cage system.

Cultural Practices

Seed was sown on April 17, 1972, seedlings transplanted into 3 inch peat pots on April 24, and field set on May 23. Five hundred lbs/A of 12-12-12 were plowed down on April 4, 1972. Starter solution of 3 lbs/50 gal. of 10-52-8 was applied during field setting at the rate of 1/2 pint/plant. A side dressing of 100 lbs/A of ammonium nitrate was applied on June 23. Dymid at 6 lbs/A was applied on May 24 for weed control. Insect and disease control were carried out at recommended intervals.

Rows were spaced 48 inches apart with plants 18 inches in the row, 15 plants per single row plot. Plants were pruned to two stems by allowing the first lateral below the first cluster to develop. All other laterals were removed to the 5th-6th cluster.

[1]Department of Horticulture, OARDC, 2001 Fyffe Court, Columbus, Ohio 43210

This page intentionally blank.

For the non-replicated cage trial all plants were placed in 30 inch tall wire cages having 12 inch diameters. No pruning or training was carried out.

Weather Data

	Temperature	Rainfall
June	63.6°	3.98"
July	71.9	2.60
August	70.1	7.96
September	64.6	5.13

Seed Sources

Code	Source
A-1	Agway, Inc., Buffalo, N.Y. 14240
B-1	Geo. J. Ball, Inc., West Chicago, Ill. 60185
B-2	W. Atlee Burpee Co., Philadelphia, Pa. 19132
F-1	Farmer Seed & Nursery Co., Faribault, Minn. 55021
F-2	Ferry-Morse Seed Co., Mountain View, Calif. 94042
H-1	Joseph Harris Co., Rochester, N.Y. 14624
L-1	Letherman's Inc., Canton, Ohio 44702
P-1	Peto Seed Co., Satiscoy, Calif. 93003
S-1	Stokes Seed Inc., Buffalo, N.Y. 14205
T-1	Otis S. Twilley Seed Co., Salisbury, Maryland 21801
V-1	Vaughn's Seed Co., Downer's Grove, Ill. 60515

Results and Discussion

The first harvest was made on July 24 and the last on October 2. Of the ten cultivars in the staked, replicated trial Fantastic, Jetstar, and Supersonic had good early yields and Supersonic produced excellent total yield (Table 1).

In most instances total yield of the ten cultivars when grown in cages (Table 2) was considerably greater than when grown on stakes (Table 1). Fruit size was about the same as that of the staked trial. However, fruiting of the cultivars in wire cages was delayed depending on earliness and vine size of the cultivar. The early, small vined cultivars were delayed 5-7 days, whereas, the late cultivars with large vines were delayed 12-14 days. Also, it was apparent that the cages used in this trial were too small for the large vine types.

This page intentionally blank.

Considering the cage size used in this trial (30" x 12"), it was apparent that five of the ten cultivars were better adapted to cage culture than were the others. The five cultivars growing and producing well without posing serious harvesting problems because of overgrowth were Heinz 1439, Caravelle, Jetstar, Fantastic and Burpee VF.

Large, vigorous indeterminate type plants such as Ramapo quickly overgrow these cages. Additional vine growth then droops over the cage creating problems for the picker in locating fruits in the interior of the plant. Under such conditions, it is possible for some fruit to become overripe and often lost because of the difficulty in detecting the ripening condition.

The solution to this problem lies primarily in selecting cultivars with a determinate or semi-determinate growth habit and/or adjusting cage size and spacing. More research is planned relative to this matter.

The data from the cultivars grown in non-replicated single plots on stakes are presented in Table 3. The cultivars are ranked in order of early yield of No. 1 grade fruits.

This page intentionally blank.

TABLE 1. -- Replicated Trial: Yield and Fruit Size of Tomato Cultivars Trained on Stakes.

Cultivar [a]	Early Harvest to July 31					Total Harvest to October 2				
	Marketable Yield (lbs/A)			Percent Culls	Fruit Size (lbs)	Marketable Yield (lbs/A)			Percent Culls	Fruit Size (lbs)
	No. 1	No. 2+3	Total			No. 1	No. 2+3	Total		
FANTASTIC P-1	4,356	1,452	5,808	5	0.30	27,540	30,637	58,177	6	0.30
JETSTAR H-1	3,146	97	3,243	21	0.26	37,268	22,409	59,667	8	0.29
SUPERSONIC H-1	3,146	242	3,388	13	0.30	33,057	39,640	72,697	6	0.33
CARAVELLE H-1	2,226	194	2,420	23	0.24	25,168	22,700	47,868	13	0.26
BALL BETTER BOY B-1	1,888	387	2,275	13	0.27	15,391	47,335	62,726	5	0.35
BURPEE VF B-2	1,500	97	1,597	17	0.24	28,217	26,039	54,256	9	0.30
MARKET KING T-1	1,162	339	1,501	26	0.27	11,277	39,349	50,626	9	0.31
HEINZ 1439 H-1	1,016	34	1,050	47	0.20	32,864	12,197	45,061	23	0.26
WONDER BOY P-1	532	726	1,258	19	0.25	12,294	32,670	44,964	9	0.31
RAMAPO V-1	194	34	228	6	0.20	29,863	20,618	50,481	9	0.24
LSD at 5% Level	1,476		1,544			7,492		11,437		

[a] Cultivars with seed sources ranked in order of early yield of No. 1 grade fruits. Data based on mean of three replications.

This page intentionally blank.

TABLE 2. -- Non-Replicated Caged Plot: Yield and Fruit Size of Tomato Cultivars Grown in Cages.

Cultivar[a]	Early Harvest to July 31					Total Harvest to October 2				
	Marketable Yield (lbs/A)			Percent Culls	Fruit Size (lbs)	Marketable Yield (lbs/A)			Percent Culls	Fruit Size (lbs)
	No. 1	No. 2+3	Total			No. 1	No. 2+3	Total		
FANTASTIC P-1	2,517	968	3485	13	0.18	27,927	54,547	82,474	7	0.30
JETSTAR H-1	1,597	-	1597	35	0.24	47,335	28,120	75,456	15	0.27
SUPERSONIC H-1	871	145	1016	12	0.26	41,430	39,930	81,360	8	0.29
CARAVELLE H-1	1,597	97	1694	30	0.21	33,057	38,817	71,874	16	0.26
BALL BETTER BOY B-1	871	-	871	0	0.22	10,842	46,416	57,258	6	0.28
BURPEE VF B-2	726	145	871	25	0.18	26,814	25,749	52,563	16	0.28
MARKET KING T-1	484	97	581	40	0.24	19,505	37,462	56,967	14	0.27
HEINZ 1439 H-1	97	-	97	60	0.20	38,284	17,279	55,563	30	0.25
WONDER BOY P-1	678	-	678	13	0.20	9,148	26,959	36,107	13	0.33
RAMAPO V-1	-	-	-	100	-	21,877	17,327	39,204	18	0.26

[a]Cultivar sequence same as TABLE 1

This page intentionally blank.

TABLE 3. -- Non-Replicated Observation Plots: Yield and Fruit Size of Tomato Cultivars Trained on Stakes.

Cultivar	Seed Source	Early Harvest to July 31					Total Harvest to October 2				
		Marketable Yield (lbs/A)			Percent Culls	Fruit Size (lbs)	Marketable Yield (lbs/A)			Percent Culls	Fruit Size (lbs)
		No. 1	No. 2+3	Total			No. 1	No. 2+3	Total		
CAMPBELL 1327	H-1	4,792	484	5,276	15	0.26	31,847	19,602	51,449	9	0.30
FANTASTIC	H-1	3,678	823	4,501	7	0.27	20,086	28,991	49,078	6	0.30
MORETON HYB	H-1	2,904	678	3,582	10	0.22	26,475	35,961	62,436	7	0.26
EARLY-SUMMER VF	B-1	2,904	48	2,952	36	0.22	21,925	15,391	37,316	23	0.24
CARDINAL HYB	H-1	2,759	145	2,904	17	0.29	27,104	40,608	67,712	10	0.32
NEW YORKER	H-1	2,565	436	3,001	56	0.19	11,858	7,163	19,021	41	0.22
TERRIFIC VFN	P-1	2,420	726	3,146	24	0.23	16,698	34,703	51,401	9	0.27
LATE-SUMMER VFN	B-1	2,275	97	2,372	17	0.26	26,184	39,204	65,388	10	0.32
SPRING GIANT HYB	B-2	1,888	194	2,082	22	0.25	18,053	26,184	44,237	9	0.31
MONTE CARLO VFN	P-1	1,839	532	2,371	17	0.26	23,716	33,299	57,015	10	0.31
FIREBALL	H-1	1,839	-	1,839	50	0.20	23,038	11,810	34,848	23	0.24
BURPEE BIG EARLY	B-2	1,742	532	2,274	13	0.24	12,342	43,318	55,660	9	0.29
MID-SUMMER VFN	B-1	1,597	436	2,033	16	0.23	14,859	37,365	52,224	10	0.28
CORONET	H-1	1,500	194	1,694	19	0.23	23,522	31,508	55,030	12	0.29
SUNSET	F-1	1,452	97	1,549	38	0.21	24,200	14,278	38,478	20	0.26

This page intentionally blank.

TABLE 3. -- Page 2

Cultivar	Seed Source	Early Harvest to July 31					Total Harvest to October 2				
		Marketable Yield (lbs/A)			Percent Culls	Fruit Size (lbs)	Marketable Yield (lbs/A)			Percent Culls	Fruit Size (lbs)
		No. 1	No. 2+3	Total			No. 1	No. 2+3	Total		
WALTER	P-1	1,307	-	1,307	13	0.25	25,265	35,477	60,742	11	0.30
MARGLOBE	L-1	1,162	-	1,162	30	0.24	13,407	30,347	43,754	17	0.28
HEINZ 1350	H-1	1,113	194	1,307	23	0.21	25,168	14,810	39,978	24	0.24
SUPER RED	A-1	920	290	1,210	19	0.23	23,716	42,495	66,211	5	0.33
SPRINGSET	H-1	871	-	871	58	0.20	24,974	16,262	41,236	23	0.27
RUTGERS	B-2	823	48	871	10	0.26	11,713	25,362	37,075	13	0.29
TROPIGRO	P-1	678	48	726	6	0.21	18,586	46,028	64,614	7	0.34
WONDER BOY	P-1	532	145	677	44	0.20	11,906	39,349	51,255	8	0.31
RAMAPO	H-1	436	-	436	36	0.23	20,860	24,587	45,447	13	0.33
TRAVELER	H-1	436	-	436	50	0.23	34,751	10,696	45,447	25	0.25
BURPEE BIG BOY	B-2	387	242	629	31	0.26	9,438	40,801	50,239	6	0.34
JIM DANDY	F-2	290	532	822	41	0.21	10,551	46,222	56,773	5	0.32
MANALUCIE	B-2	290	97	387	20	0.27	19,796	37,655	57,451	9	0.33
BURPEE DELICIOUS	B-2	145	242	387	0	0.40	3,485	32,476	35,961	1	0.58
SEPTEMBER DAWN	H-1	97	-	97	0	0.20	18,053	15,586	33,639	15	0.32

This page intentionally blank.

TABLE 3. -- Page 3

Cultivar	Seed Source	Early Harvest to July 31					Total Harvest to October 2				
		Marketable Yield (lbs/A)			Percent Culls	Fruit Size (lbs)	Marketable Yield (lbs/A)			Percent Culls	Fruit Size (lbs)
		No. 1	No. 2+3	Total			No. 1	No. 2+3	Total		
GOLDEN QUEEN	S-1	97	242	339	12	0.23	3,824	32,234	36,058	7	0.35
BEEFEATER	V-1	97	194	291	14	0.15	1,936	26,959	28,895	5	0.49
SUNRAY	B-2	48	-	48	50	0.10	18,440	25,749	44,189	5	0.28
SUPER BEEFSTEAK	T-1	-	290	290	0	0.30	2,275	45,883	48,158	6	0.47
PONDEROSA	B-2	-	145	145	40	0.15	4,501	28,362	32,863	16	0.29
ROYAL ACE VF	P-1	-	-	-	0	-	12,439	24,200	36,639	11	0.33
ROYAL ACE	F-2	-	-	-	0	-	13,649	20,231	33,880	14	0.33
GRAND PRIX VF	F-2	-	-	-	-	-	2,517	29,621	32,138	4	0.42

This page intentionally blank.